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## Reviews.

*Catalogue of the African Plants collected by Dr. Friedrich Welwitsch in 1853-61.* Dicotyledons, Part I. By William Philip Hiern, M.A., F.L.S. Pp. 336. 8vo. London. Printed by order of the Trustees of the British Museum, 1896.

The volume under discussion is the first of a series and contains Ranunculaceae to Rhizophoraceae. Many new species are described and the very copious notes in reference thereto add materially to the value of the work and bear testimony to the indefatigable ardor and ability of the collector, who had all the usual concomitants of African travel to struggle against, as well as to the patience and skill of the compiler. Dr. Welwitsch's African collections have been estimated at upward of 5,000 botanical species and some 3,000 species of insects and other animals, a large proportion of which were new to science. A second part will finish the Dicotyledones and a third one will be devoted to the remaining groups. In the nomenclature line there is much of interest, and among generic changes the following should be noted: *Chienfugosia* Cav. (1786) replaces *Fugosia* Juss.; *Cracca* L. (1753), *Tephrosia* Pers. (1807); *Meibomia* Heister (1732) ex Fabric. (1759), *Desmodium* DC. (1813); *Canavali* Adans. (1763), *Canavalia* DC. (1825); *Doticholus* Medik. (1787), *Rhynchosia* Lour. (1790); *Amerimnon* P. Br. (1756), *Dalbergia* L. f. (1781); *Deguelia* Aubl. (1775), *Derris* Lour. (1790).

A. M. V.

*Nature, Structure and Phylogeny of Daemonelix.* E. H. Barbour. Bull. Geol. Soc. Am. 8: 305-314. pls. 31-39. Ap., 1897.

In this contribution we have the author's final conclusions in regard to this exceedingly interesting organism—conclusions which are amply defended by an array of facts which skeptics will find it difficult to controvert.

What appears like phylogeny is represented by the vertical arrangement of the organisms in well-defined zones, beginning with simple fibres and evolving upwards through "cakes" and "balls" of matted fibres into "fingers" and finally into the gigantic coiled stems at the summit—a vertical range all told of some 75 meters.

The structure, as demonstrated by the microscope, is undoubtedly vegetable and the author finally says : "The study of the great tubes of *Daemonelix*, made possible by the recent discovery of perfectly preserved specimens, threatens to make radical, if not revolutionary change—removing *Daemonelix* altogether from the dominion of the algae and exalting it to that of the dicotyledons."

A. H.

*Stratigraphy and Paleontology of the Laramie and related Formations in Wyoming.* By T. W. Stanton and F. H. Knowlton. Bull. Geol. Soc. Am. 8: 127-156. F. 1897.

How the Laramie formation should be limited and defined has been a burning question with geologists for more than a quarter of a century. Numerous local sub-divisions have been included or withdrawn, and the limits expounded or contracted by one authority or another, and its position in the geological column has been shifted back and forth between the Cretaceous and Tertiary periods.

The authors have wisely avoided depending upon one class of evidence only in drawing their conclusions and have drawn freely from both invertebrate palaeontology and palaeobotany, in trying to determine the relative ages of the several beds and the limits of what should be called the Laramie formation. Apparently the formation is defined by the authors as lying between the highest marine Cretaceous beds of the Rocky Mountain region at the base and including the lowest of the Fort Union plant beds as the summit.

A. H.

*The American Fruit Culturist.* By John J. Thomas. 20th edition, revised and enlarged, by Wm. H. S. Wood.

A timely book, sure to receive a hearty welcome. First written about thirty years ago, editions have quickly succeeded one another until the twentieth, now under consideration. It is a handy volume of less than 800 pages, presenting in a condensed, but always clear and practical form, a survey of the whole field of fruit culture, from the pineapple, banana and orange of semi-tropical Florida, to the many common small fruits of northern gardens. The only two omissions noticed are the almond and olive which have, perhaps, as good a claim to recognition as the

fig and date. All varieties which have approved themselves to the experimenters of later years, and become standard, are carefully described, while many others of lesser importance are relegated to a convenient descriptive index. The editor has sought the aid of experts in their several specialties and made diligent use of the copious literature from the State Experiment Stations, so that every subject is fully up to date. An admirable feature of the work is its wealth of illustration, all cuts of fruit being from nature and life-size. An interesting, but too short chapter is that on "Wild Fruits," including Buffalo berry; Huckleberries, June berry and Papaw (*Asimina triloba*). Under this head, but in a larger book, the reviewer might also expect to see several species of barberry, choke-cherry, yucca, cereus, opuntia, etc.

This work aims chiefly at the imparting of "practical directions for the propagation and culture of all fruits adapted to the United States," and in so far is certainly very successful. The botanical part, that is the scientific naming and classification of species and varieties, was apparently considered of little relevancy and importance, and neglected accordingly. Yet I cannot help thinking that in a standard work of this kind proper efforts at a scientific arrangement of the many kinds of fruits described, referring them, so far as known, to their parent species, varieties and races, would give it a distinct additional value. Under blackberry, currant, grape, etc., the generic, still less the specific names are not even mentioned, the various kinds being arranged mostly according to color. Raspberry, plum and strawberry fare much better, being naturally classified. The improved cultivated forms of hickories are referred to the "shellbark (*Hicoria laciniosa*)" instead of the shagbark (*H. ovata*). Valuable fruit trees seemingly are the black walnut and butternut "whose nuts are highly appreciated and much used;" the better and more promising fruit of the California walnut is not mentioned.

Despite these little imperfections, showing the lack of a botanist's touch, this book remains our best manual of fruit culture, and the most useful guide and counsellor for all fruit growers.

V. H.

*Plants and their Children.* By Mrs. William Starr Dana. Illustrated by Alice Josephine Smith. Pp. 272. American Book Company, 1896.

The author presents in a popular form the study of plant life so as to bring it within the comprehension and adapt it to the tastes of a child.

An appreciation of the psychologic truth, "activity is the law of childhood" is shown by the attention accorded to the special contrivances and mechanisms by which insects are trapped and attracted, and seeds disseminated. Vital processes, similar to those in the child's experience such as sleep, respiration and circulation are simply and clearly treated. Several cuts, reproduced from the *Natural History of Plants*, translated from the German of Kerner von Marilaun, add to the general attractiveness of the book, which might profitably be used at times as a reader to supplement the work of a class studying botany.

M. A. S.

### Proceedings of the Club.

WEDNESDAY EVENING, March 31, 1897.

In the absence of the President, Vice-President Allen presided. There were twenty persons present.

The first paper, by Dr. Albert Schneider, "The Phenomena of Symbiosis," and a paper by Leonard Baron on "Horticulture in Botanical Gardens," were read by title, owing to unavoidable detentions.

The evening was occupied by a paper by Professor Edward S. Burgess on "*Aster macrophyllus* and its Allies," illustrated by charts of relationship and by numerous specimens.

The speaker sketched briefly the history of the species *Aster macrophyllus*, in which it has been the custom of American botanists to include all large-leaved *Asters*. He showed how diverse these *Asters* are and in what confusion their assignment to a single species results, and indicated the characters according to which they form two groups each of several species and varieties.

The paper which will soon appear in print, was discussed by